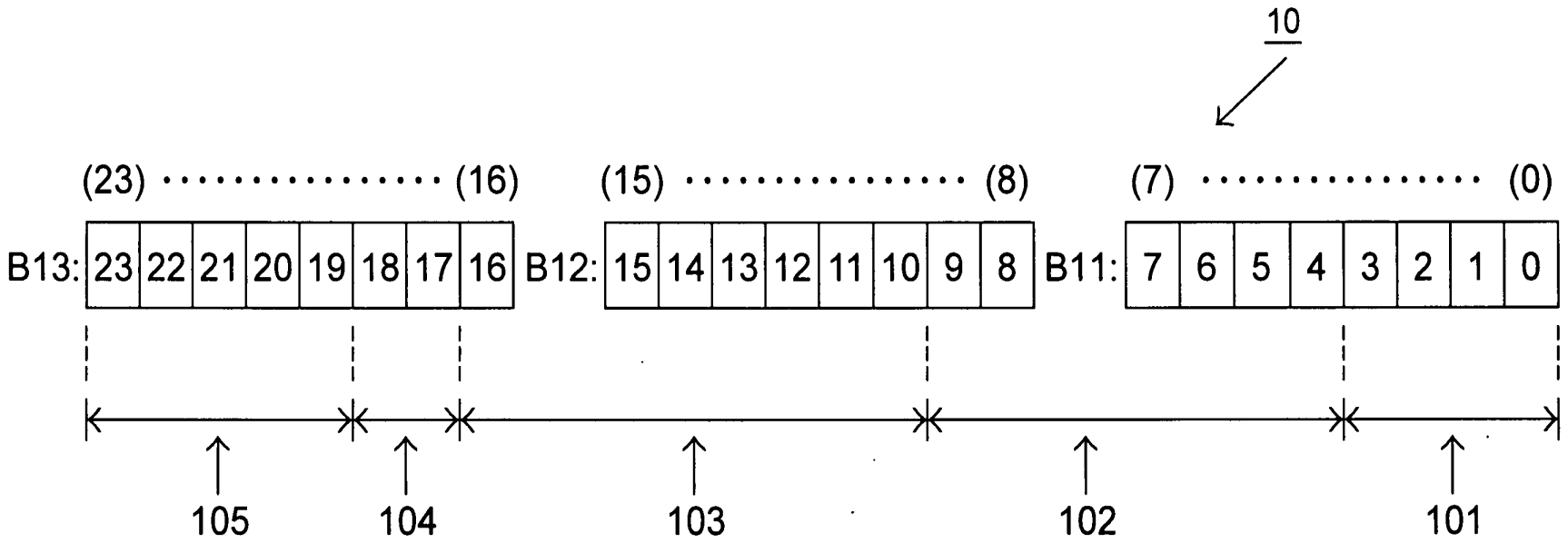


Fig.1
PRIOR ART

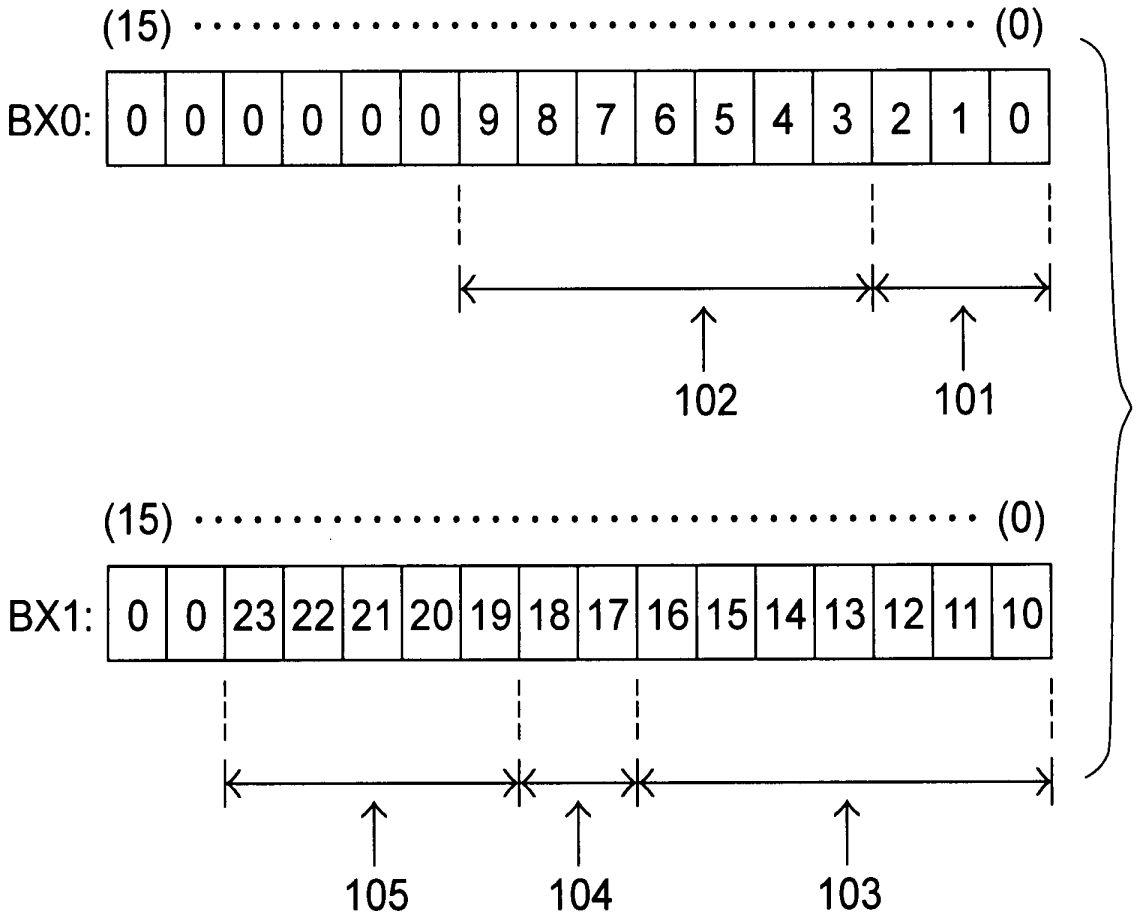


Fig.2A
PRIOR ART

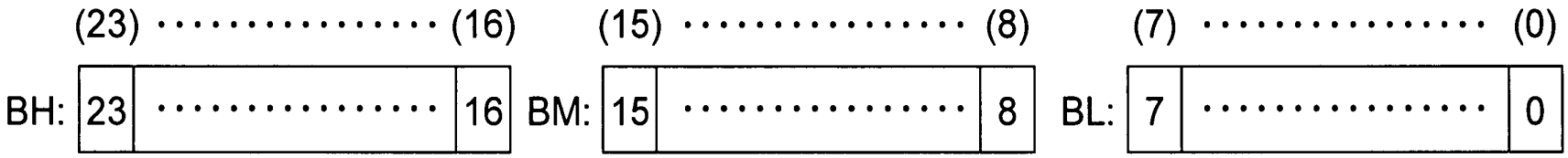


Fig.2B
PRIOR ART

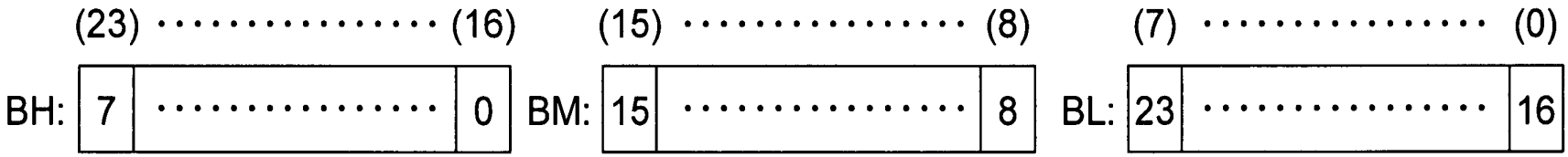


Fig.2C
PRIOR ART

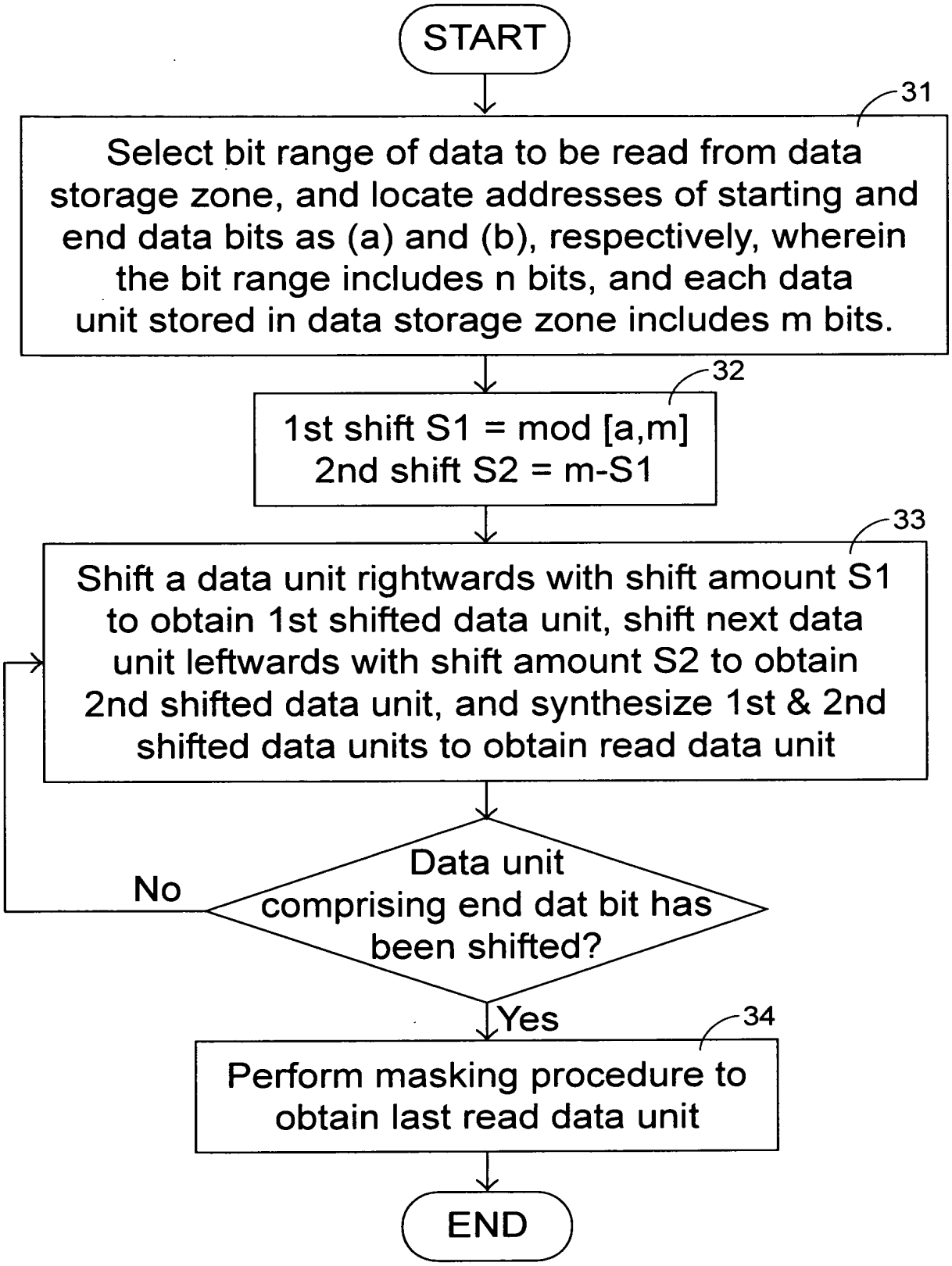
START
31
Select bit range of data to be read from data storage zone, and locate addresses of starting and end data bits as (a) and (b), respectively, wherein the bit range includes n bits, and each data unit stored in data storage zone includes m bits.
32
1st shift S1 = mod [a,m]
2nd shift S2 = m-S1
33
Shift a data unit rightwards with shift amount S1 to obtain 1st shifted data unit, shift next data unit leftwards with shift amount S2 to obtain 2nd shifted data unit, and synthesize 1st & 2nd shifted data units to obtain read data unit
Data unit comprising end dat bit has been shifted?
No
Yes
34
Perform masking procedure to obtain last read data unit
END

Fig.3

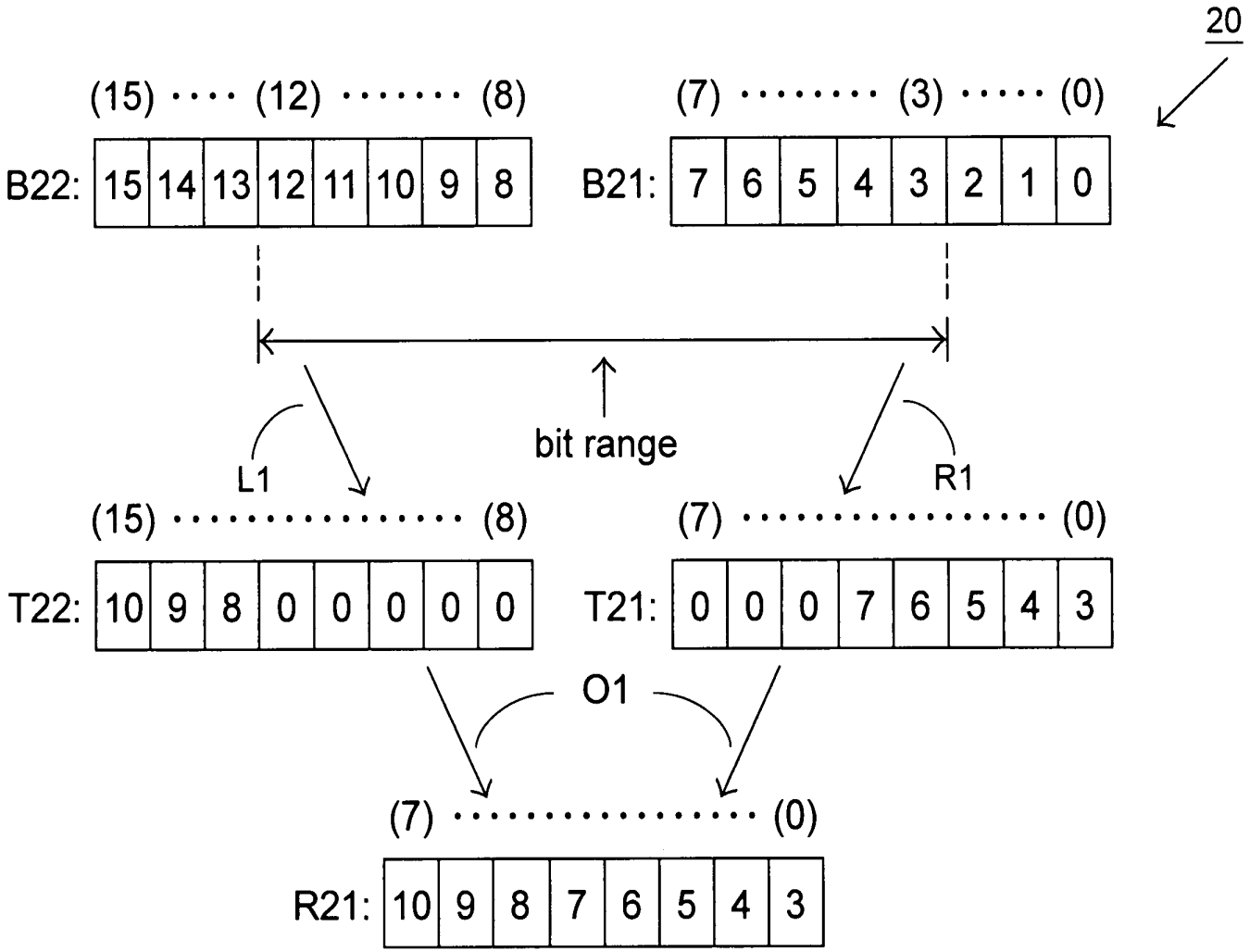
20
(15) (12) (8)
(7) (3) (0)
B22: 15 14 13 12 11 10 9 8
B21: 7 6 5 4 3 2 1 0
bit range
L1
R1
(15) (8)
(7) (0)
T22: 10 9 8 0 0 0 0 0
T21: 0 0 0 7 6 5 4 3
O1
(7) (0)
R21: 10 9 8 7 6 5 4 3

Fig.4A

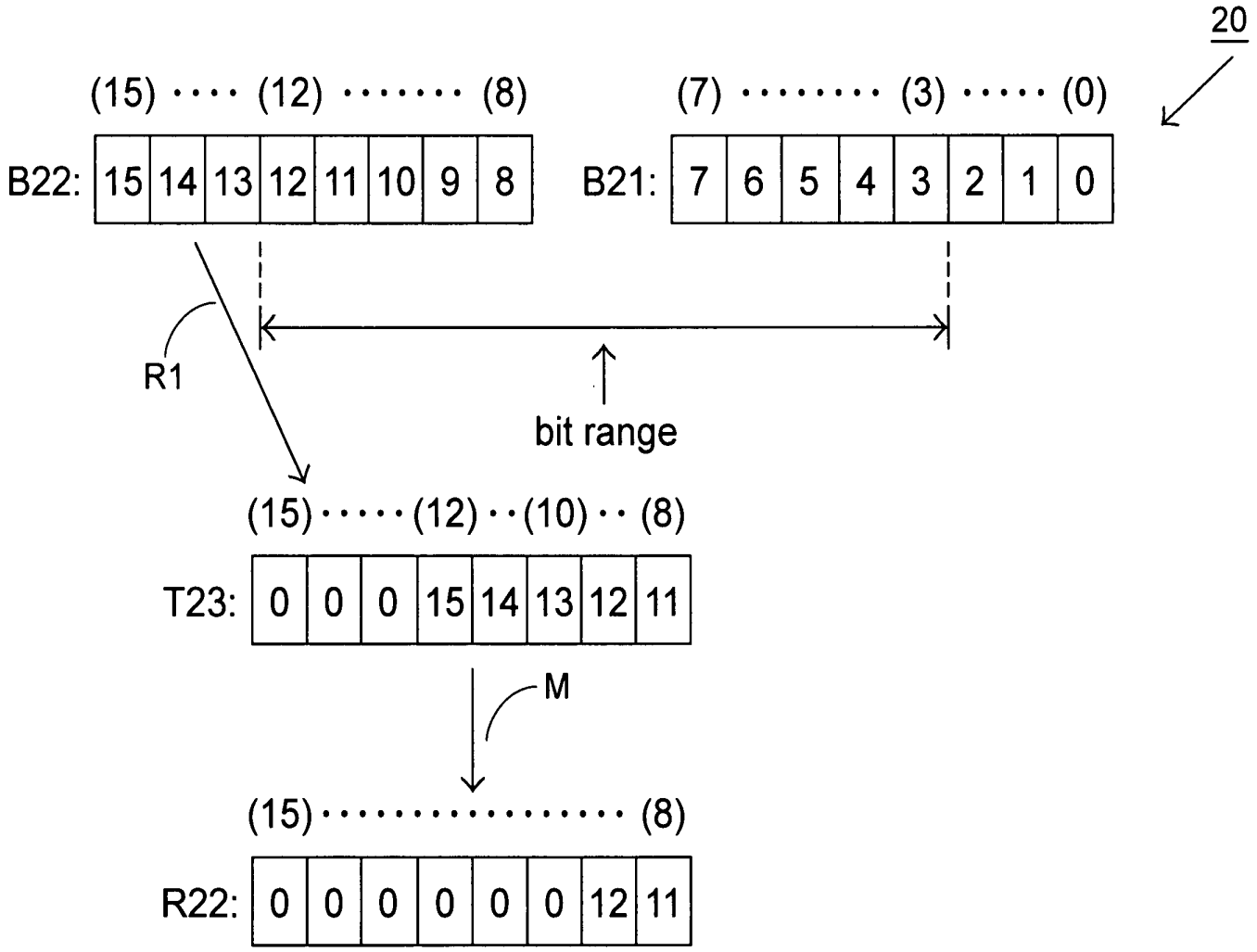
20
(15) (12) (8)
(7) (3) (0)
B22: 15 14 13 12 11 10 9 8
B21: 7 6 5 4 3 2 1 0
R1
bit range
(15) (12) (10) (8)
T23: 0 0 0 15 14 13 12 11
M
(15) (8)
R22: 0 0 0 0 0 0 12 11

Fig.4B

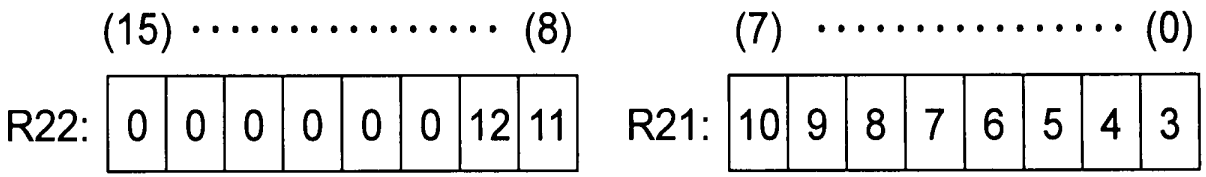


Fig.4C

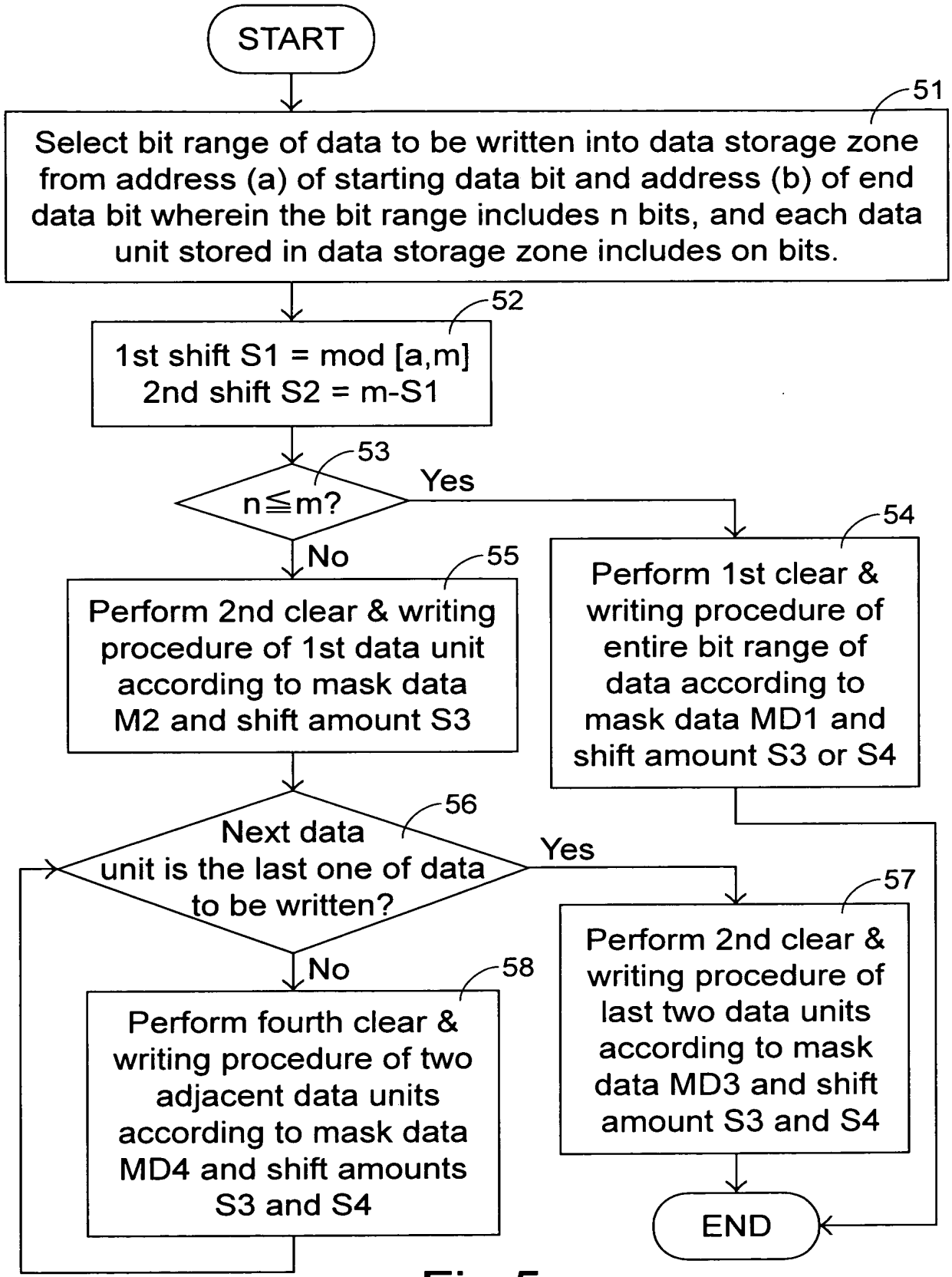
START
51
Select bit range of data to be written into data storage zone from address (a) of starting data bit and address (b) of end data bit wherein the bit range includes n bits, and each data unit stored in data storage zone includes on bits.
52
1st shift S1 = mod [a,m]
2nd shift S2 = m-S1
53
n≦m?
Yes
No
54
Perform 1st clear & writing procedure of entire bit range of data according to mask data MD1 and shift amount S3 or S4
55
Perform 2nd clear & writing procedure of 1st data unit according to mask data M2 and shift amount S3
56
Next data unit is the last one of data to be written?
Yes
No
57
Perform 2nd clear & writing procedure of last two data units according to mask data MD3 and shift amount S3 and S4
58
Perform fourth clear & writing procedure of two adjacent data units according to mask data MD4 and shift amounts S3 and S4
END

Fig.5

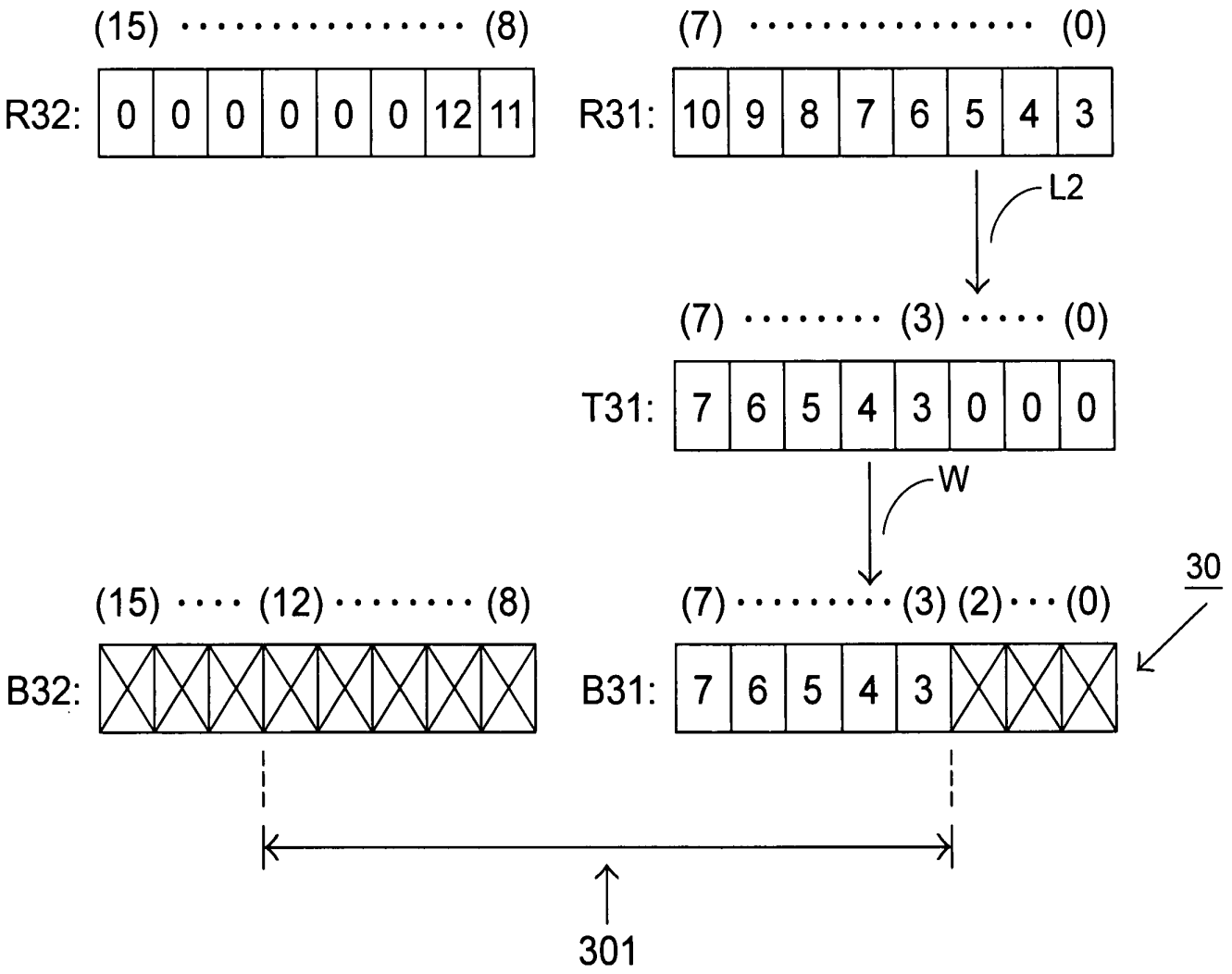
(15) ····· (8)
R32: 0 0 0 0 0 0 12 11
(7) ····· (0)
R31: 10 9 8 7 6 5 4 3
L2
(7) ····· (3) ····· (0)
T31: 7 6 5 4 3 0 0 0
W
30
(15) ···· (12) ····· (8)
B32:
(7) ····· (3) (2) ··· (0)
B31: 7 6 5 4 3
301

Fig.6A

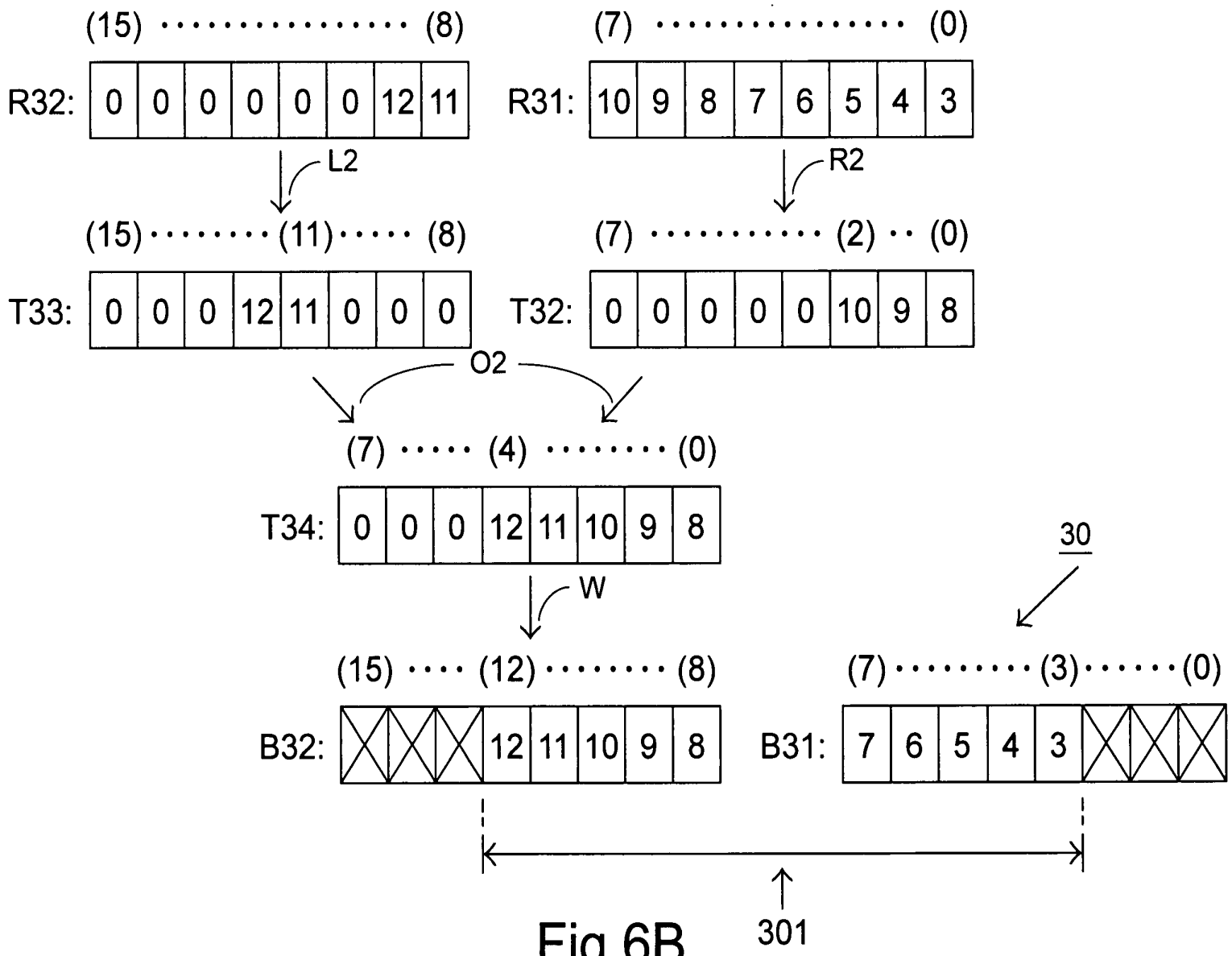
(15) (8)
R32: 0 0 0 0 0 0 12 11
L2
(15) (11) (8)
T33: 0 0 0 12 11 0 0 0
(7) (0)
R31: 10 9 8 7 6 5 4 3
R2
(7) (2) (0)
T32: 0 0 0 0 0 10 9 8
O2
(7) (4) (0)
T34: 0 0 0 12 11 10 9 8
W
(15) (12) (8)
B32: 12 11 10 9 8
30
(7) (3) (0)
B31: 7 6 5 4 3
301

Fig.6B